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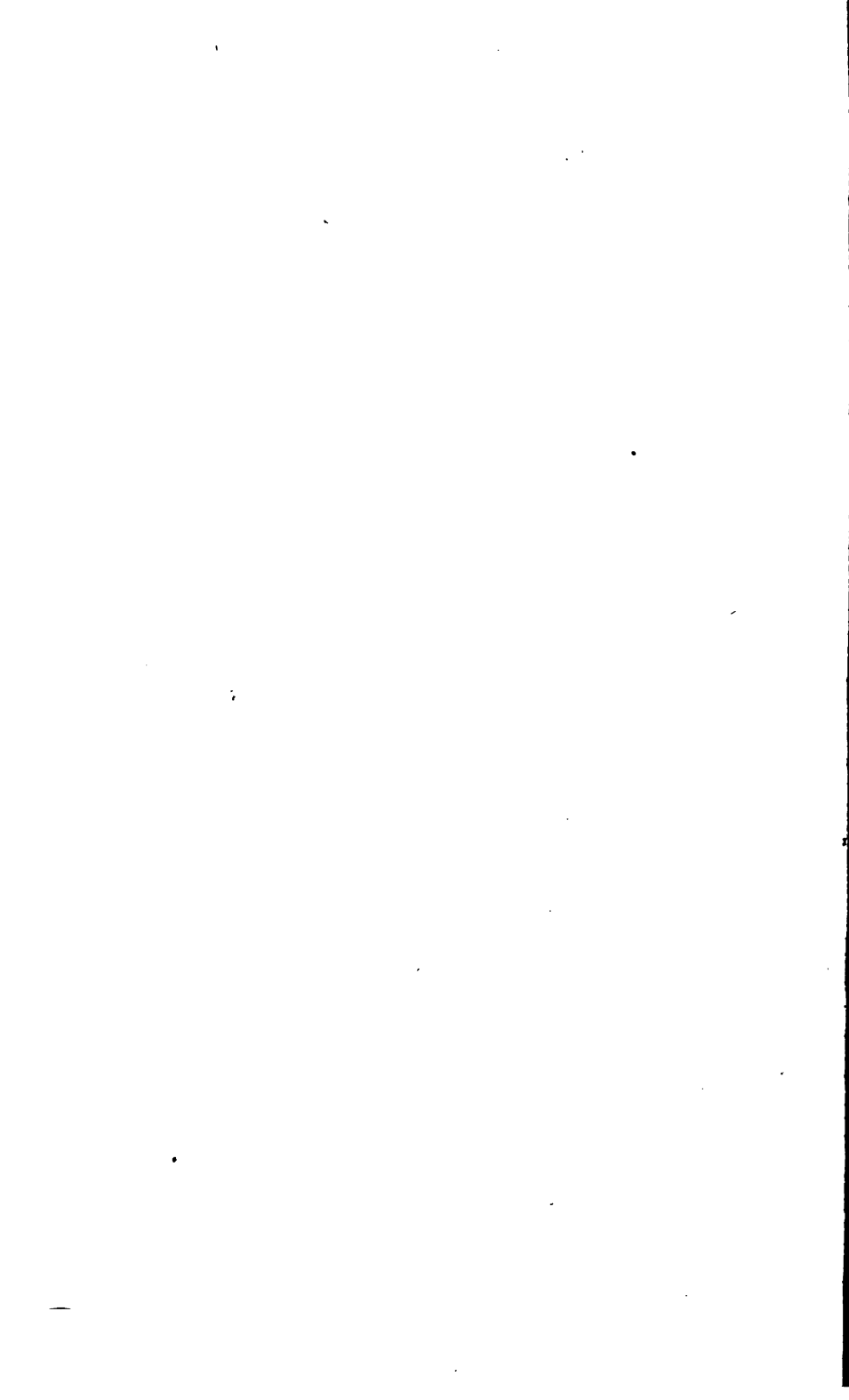




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THE  
PLACE OF MIND IN NATURE  
AND  
INTUITION IN MAN.





THE PLACE  
OF  
MIND IN NATURE  
AND  
INTUITION IN MAN.

A LECTURE.

BY  
JAMES MARTINEAU.

WILLIAMS AND NORGATE,  
14, HENRIETTA STREET, COVENT GARDEN, LONDON;  
AND 20, SOUTH FREDERICK STREET, EDINBURGH.

1872.

Q4369



LONDON :  
PRINTED BY C. GREEN AND SON,  
STRAND, W.C.

Vignaud  
1210-30

# THE PLACE OF MIND IN NATURE

## AND

### INTUITION IN MAN.

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MARK iv. 3:

BEHOLD, THERE WENT FORTH A SOWER TO SOW.

1-31-34. H.C.J.  
THAT the universe we see around us was not always there, is so little disputed, that every philosophy and every faith undertakes to tell how it came to be. They all assume, as the theatre of their problem, the field of space where all objects lie, and the track of time where events have reached the Now. But into these they carry, to aid them in representing the origin of things, such interpreting conceptions as may be most familiar to the knowledge or fancy of their age: first, the *fiat of Almighty Will*, which bade the void be filled, so that the light kindled, and the waters swayed, and the earth stood fast beneath the vault of sky; next, when the sway of poetry and force had yielded to the inventive arts, the idea of a *contriving and adapting power*, building and balancing the worlds to go smoothly and keep time together, and stocking them with self-moving and sensitive machines; and now, since physiology has got to the front, the analogy of *the seed or germ*,

in itself the least of things, yet so prolific that, with history long enough, it will be as spawn upon the waters, and fill every waste with the creatures as they are. The prevalence of this newest metaphor betrays itself in the current language of science: we now "*unfold*" what we used to "*take to pieces*;" we "*develop*" the theory which we used to "*construct*;" we treat the system of the world as an "*organism*" rather than a "*mechanism*;" we search each of its members to see, not what it is *for*, but what it is *from*; and the doctrine of *Evolution* only applies the image of indefinite growth of the greater out of the less, till from some datum invisible to the microscope arises a teeming universe.

In dealing with these three conceptions,—of *Creation*, *Construction*, *Evolution*,—there is one thing on which Religion insists, viz., that *Mind is first, and rules for ever*; and, whatever the process be, is *its* process, moving towards congenial ends. Let this be granted, and it matters not by what path of method the Divine Thought advances, or how long it is upon the road. Whether it flashes into realization, like lightning out of Night; or fabricates, like a Demiurge, through a producing season, and then beholds the perfect work; or is for ever thinking into life the thoughts of beauty and the love of good; whether it calls its materials out of nothing, or finds them ready, and disposes of them from without; or throws them around as its own manifestation, and from within shapes its own purpose into blossom,—makes no difference that can be fatal to human piety. Time counts for nothing with the Eternal; and though it should appear that the system of the world and the ranks of being arose, not by a start of crystallization, but, like the grass or the forest, by silent and seasonal gradations, as true a worship may be paid to the Indwelling God who makes matter itself transparent with spiritual

meanings, and breathes before us in the pulses of nature, and appeals to us in the sorrows of men, as to the pre-existing Deity who, from an infinite loneliness, suddenly became the Maker of all. Nay, if the poet always looks upon the world through a suppliant eye, craving to meet his own ideal and commune with it alive; if prayer is ever a "feeling after Him to find Him," the fervour and the joy of both must be best sustained, if they are conscious not only of the stillness of His presence, but of the movement of His thought, and never quit the date of His creative moments. In the idea, therefore, of a gradual unfolding of the creative plan, and the maturing of it by rules of growth, there is nothing necessarily prejudicial to piety; and so long as the Divine Mind is left in undisturbed supremacy, as the living All in all, the belief may even foster a larger, calmer, tenderer devotion, than the conceptions which it supersedes. But it is liable to a special illusion, which the others by their coarsely separating lines manage to escape. Taking all the causation of the world into the interior, instead of setting it to operate from without, it seems to dispense with God, and to lodge the power of indefinite development in the first seeds of things; and the apprehension seizes us, that as the oak will raise itself when the acorn and the elements are given, so from its germs might the universe emerge, though nothing Divine were there. The seeds no doubt were on the field; but who can say whether ever "a Sower went forth to sow"? So long as you plant the Supreme Cause at a distance from His own effects, and assign to Him a space or a time where nothing else can be, the conception of that separate and solitary existence, however barren, is secure. But in proportion as you think of Him as never in an empty field, waiting for a future beginning of activity, as you let Him

minge with the elements and blend with the natural life of things, there is a seeming danger lest His light should disappear behind the opaque material veil, and His Spirit be quenched amid the shadows of inexorable Law. This danger haunts our time. The doctrine of Evolution, setting itself to shew how the greatest things may be brought out of the least, fills us with fear whether perhaps Mind may not be last instead of first, the hatched and full-fledged form of the protoplasmic egg; whether at the outset anything was there but the raw rudiments of matter and force; whether the hierarchy of organized beings is not due to progressive differentiation of structure, and resolvable into splitting and agglutination of cells; whether the Intellect of man is more than blind instinct grown self-conscious, and shaping its beliefs by defining its own shadows; whether the Moral sense is not simply a trained acceptance of rules worked out by human interests, an inherited record of the utilities; so that Design in Nature, Security in the Intuitions of Reason, Divine Obligation in the law of Conscience, may all be an illusory semblance, a glory from the later and ideal days thrown back upon the beginning, as a golden sunset flings its light across the sky, and, as it sinks, dresses up the East again with borrowed splendour.

This doubt, which besets the whole intellectual religion of our time, assumes that we must *measure every nature in its beginnings*; admit nothing to belong to its essence except what is found in it then; and deny its reports of itself, so far as they depart from that original standard. It takes two forms, according as the doctrine of Evolution is applied to Man himself, or to the outward universe. In the former case, it infuses distrust into our self-knowledge, weakens our subjective religion or native faith in the intuitions of

thought and conscience, and tempts us to imagine that the higher they are, the further are they from any assured solidity of base. In the latter case, it weakens our objective religion, suggests that there is no originating Mind, and that the divine look of the world is but the latest phase of its finished surface, instead of the incandescence of its inmost heart. Let us first glance at the theory of HUMAN evolution, and the moral illusions it is apt to foster.

I. Under the name of the "Experience Philosophy," this theory has long been applied to the *mind of the individual*; and has produced not a few admirable analyses of the formation of language and the tissue of thought; nor is there any legitimate objection to it, except so far as its simplifications are overstrained and cannot be made good. It undertakes, with a minimum of initial capacity, to account for the maximum of human genius and character: give it only the sensible pleasures and pains, the spontaneous muscular activity, and the law by which associated mental phenomena cling together; and out of these elements it will weave before your eyes the whole texture of the perfect inner life, be it the patterned story of imagination, the delicate web of the affections, or the seamless robe of moral purity. The outfit is that of the animal; the product but "a little lower than the angel." All the higher endowments,—our apprehension of truth, our consciousness of duty, our self-sacrificing pity, our religious reverence,—are in this view merely transformed sensations; the disinterested impulses are refinements spun out of the coarse fibre of self-love; the subtlest intellectual ideas are but elaborated perceptions of sight or touch; and the sense of Right, only interest or fear under a disguise. If this be so, how will the discovery affect our natural trust

in the intimations of our supreme faculties? Does it not discharge as dreams their most assured revelations? By intuition of Reason we believe in the Law of Causality, in the infinitude of Space, in the relations of Number, in the reality of an outside world, in all the fundamental conceptions of Science; but here are they, one and all, recalled to the standard of Sense, which they seem to transcend, and emptied of any meaning beyond. By vision of Imagination we see an ideal beauty enfolding many a person and many a scene, and appealing to us as a pathetic light gleaming from within; but here we find it all resolved into curvature of lines and adjustments of colour. By inspiration of Conscience we learn that our sin is the defiance of a Divine authority, and, though hid from every human eye, drives us into a wilderness of Exile,—for “the wicked fleeth, though no man pursueth;” but here we are told that the ultimate elements of good and evil are our own pleasures and pains, from which the moral sanction selects as its specialty the approbation and disapprobation of our fellow-men. Thus all the independent values which our higher faculties had claimed for their natural affections and beliefs are dissipated as fallacious; they are all based upon a *sentient measure* of worth which lies at the bottom; they are like paper money, refined contrivances representative of the ultimate gold of pleasure, but, where not interchangeable with this, intrinsically worthless. And so the feeling almost inevitably spreads, that we are dupes of our own characteristic capacities; that the loftier air into which they lift us is a tinted and distorting medium, and shews us glories that are not there; that the idea of an eternal Fount of beauty, truth and goodness, behind the pleasingness and concinnity of phenomena, is an illusion; and that the tendency, irresistible as it is, to cling to this



idea as something higher than its denial, is but a part of the romance. Is this scepticism imaginary? Let any one, in studying the modern writers of this school, compare the solid, manly, sensible way in which they deal with everything on the physiological and sensational level, with their manner towards all the convictions and sentiments usually recognized as the supreme lights of our nature; the tone now of forbearing indulgence, now of sickly appreciation, often of hardly concealed contempt, that is heard beneath the interminable conjectural analyses of Moral and Religious affections; and he will feel the difference between the honour that is paid to truth, and the constrained patience towards what other men revere.

By a recent extension, the theory of Evolution has been applied to the whole natural history of our race; and the resources of *Habit*, already serviceable in explaining the aptitudes of individuals, have been turned to account on the larger scale of successive generations, transmitting by inheritance the acquisitions hitherto made good. In the training of a nature, the world thus becomes a permanent school, the interruption of death is virtually abolished, and life is laid open to continuous progress. By this immense gain of power, it is supposed, all the differences which separate Man from other animals may be accounted for as gradual attainments; and many an intuition of the mind, too immediate and self-evident to be a product of personal experience, may yield to analysis as a more protracted growth, and stand as the compend of ages of gathering feeling and condensing thought. Among creatures that herd together for common safety, each one learns to read the looks of anger or of good-will in its neighbours, and discovers what it is that brings upon him the one or other; and insensibly he forms to himself a rule for avoiding the displeasure

and conciliating the favour in which he has so large an interest. This rudimentary experience imprints and records itself in the nervous organization, and descends to ulterior generations as an original and instinctive recoil from what offends and impulse towards what gratifies the feeling of the tribe: so that the lesson needs not be gone over again; but the offspring, taking up his education where the parent left off, accumulates his feeling, quickens his mental execution, and hands down fresh contributions to what at last emerges as a Moral Sense. In this way, it is contended, the Conscience is a hoarded fund of traditionary pressures of utility, gradually effacing the primitive vestiges of fear, and dispensing itself with an affluence of disinterested sympathy. And the religious consciousness that visits the soul in its remorse, of an invisible Witness and Judge who condemns the sin, comes, we are told, from the deification of public opinion, or the fancy that some dead hero's ghost still watches over the conduct of his clan.

This vast enlargement of the doctrine of Evolution, while increasing its power, and removing it from the reach of accurate tests, alters neither its principle nor its practical effect. It undertakes to exhibit the highest and the greatest in our nature as ulterior phenomena of the lowest and the least. And it usually treats as a superstition our natural reverence for the rational, moral and religious intuitions as sources of independent insight and ultimate authority; and, in order to estimate them, translates them back into short-hand expressions of sensible experience and social utility. Nor can we wonder at this scepticism. If the only reality at bottom of the sense of duty is fear and submission to opinion, whatever it carries in it that transcends this ground, and persuades us of an Obligation in which fear and opinion have no voice, is an ideal addition

got up within us by causes which produce in us all sorts of psychological figments. If the only facts that lie in our idea of Space, are a set of feelings in the muscles and the skin and the eye, then whatever beliefs it involves which these cannot verify are naturally discredited, and treated as curiosities of artificial manufacture. If our human characteristics are throughout the developed instincts of the brute, differing only in degree, then the moment they present us with intuitions which are distinct *in kind*, they begin to play us false; and those who see through the cheat naturally warn us against them. And so we are constantly told that our highest attributes are only the lower that have lost their memory, and mistake themselves for something else.

It is not my present intention to call in question either of these varieties of evolution. Inadequate as the evidence of them both appears to be, I will suppose their case to be made out: and still, I submit, it does not justify the sceptical estimate which it habitually fosters of the intellectual, moral and religious intuitions of the human mind. For,

(1.) Though animal sensation, with its connected instinct, should be the raw material of our whole mental history, it is not on that account entitled *to measure all that comes after it*, and stand as the boundary-line between fact and dream, between terra firma and "airy nothing." That which is first in Time has no necessary priority of rank in the scale of truth and reality; and the later-found may well be the greater existence and the more assured. If it is a development of Faculty, and not of incapacity, which the theory provides, the process must advance us into new light, and not withdraw us from clearer light behind: and we have reason to confide in the freshest gleams and inmost visions of to-day, and to discard whatever quenches and confuses them in the vague and turbid beginnings of the Past. With

what plea will you exhort one, "If you would rid yourself of intellectual mysteries, come with us, and see the stuff your thought is made of: if you would stand free of ideal illusions, count with us the medullary waves that have run together into the flood-tide of what you call your conscience: if you would shake off superstition, look at the way in which the image of dead men will hang about the fancy of a savage, or the personification of an abstract quality imposes on the ignorance of simple times"? Is our wisdom to be gathered by going back to the age before our errors? And instead of consulting the maturity of thought, are we to peer into its cradle and seek oracles in its infant cries? If the last appeal be to the animal elements of experience, we can learn only by unlearning; and by shutting one after another of the hundred ideal eyes of the finished intellect, we shall have a chance of seeing and feeling things as they are. If nothing is to be deemed true but what the pre-human apes saw, then all the sciences must be illusory; with the suicidal result that, with them, this doctrine of Evolution must vanish too. Or if, stopping short of this extreme distrust of the acquired intuitions, you make a reservation in favour of the new visions of the intellect, what right can you shew for discharging those of the conscience? The tacit assumption therefore that you upset a super-sensual belief by tracing the history of its emergence among sensible conditions, is a groundless prejudice.

(2.) Further, the question to be determined may be presented as a problem in physiology, to be resolved by corresponding rules: What is the *function* of certain parts of our human constitution, viz. the Reason and the Moral Faculty? Now it is a recognized principle that, in estimating function, you must study the organ, not in its rudi-

mentary condition, before it has disengaged itself from adjacent admixtures and flung off the foreign elements, but in its perfect or differentiated state, so as to do its own work and nothing else. In order to give the idea of a time-piece to one who had it not, you would not send him to one of the curious mediæval clocks which could play a tune, and fire a gun, and announce the sunrise, and mark the tides, and report twenty miscellaneous things besides ; but to the modern chronometer, simple and complete, that, telling only the moment, tells it perfectly. And in natural organizations, to learn the capabilities and project of any structure, you would not resort to the embryo where it is forming but not working : you would wait till it was born into the full presence of the elements with which it had to deal : not till then could you see how they played upon it, and what was its response to them. In conformity with this rule, whither would you betake yourself, if you want to measure the intrinsic competency of our intellectual faculty, and determine what its very nature gives it to know ? Would you take counsel of the nurse who held you “when you first opened your eyes to the light,”\* or otherwise study “the first consciousness in any infant,” “before the time when memory commences,”† and disregard everything “subsequent to the first beginnings of intellectual life”?‡ On the contrary, you would avoid that soft inchoate promise of nature, only nominally born, where the very structures of its finer work have not yet set into their distinctive consistency and form ; and will hold your peace till the faculty is awake and on its feet, and can clearly tell you what it sees for itself, and what it makes out at second-hand : just as, to gauge the lunar light, you must have

\* Mill's Examination of Hamilton, 3rd Edition, p. 172.

† Ibid.

‡ Ibid. p. 160.

patience while the thin crescent grows, and wait till the full orb is there. Still less can you take the report of the Moral Faculty from the confessions of the cradle, or from the quarrels and affections of the apes ; the conditions being not yet present for the bare conception of a moral problem. The most that can be asked of an intuition is, that it shall keep pace with the cases as they arise, and be on the spot when it is wanted ; and if you would know what provision our nature holds for dealing with its Duty and interpreting its guilt, you must go into the thick of its moral life, and bid it tell you what it sees from the swaying tides of temptation and of victory. The "purity" of intuitions is not "pristine," but ultimate ; cleared at length from accidental and irrelevant dilutions, and with essence definitely crystallized, they realize and exhibit the idea that lay at the heart of all their tentatives, and constitutes their truth. Am I told that it is hopeless at so late an hour to separate what is an indigenous gift from what is implanted by *éducation* ? I reply, it no doubt requires, but it will not baffle, the hand of skilled analysis ; it is a difficulty which, in other cases, we find it not impossible to overcome ; for there are assuredly instincts and affections, strictly original and natural, that make no sign and play no part till our maturer years, yet which are readily distinguished from the products of artificial culture.

If, to find the functions of our higher faculties, we must look to their last stage and not to their first, we at once recover and justify the ideal conceptions which the expositors of Evolution are accustomed to disparage as romance. For among these functions are present certain Intuitive beliefs—for the Reason, in Divine Causality ; for the Conscience, in Divine Authority ; together blending into the knowledge of a Supreme and Holy Mind. These august

apprehensions we are entitled to declare are not the illusions, but the discoveries, of Man; who, by rising into them, is born into more of the Universe of things than any other being upon earth, and is made conscious of its transcendent and ultimate realities. If these trusts are indeed the growth of ages, from seeds invisibly dropped upon the field of time, be it so; it was not without hand: there was *a Sower* that went forth to sow.

II. We turn now to the Second Form of doubt raised by the doctrine of Evolution: under which it weakens our objective trust in an originating Mind.

A naturalist who to his own satisfaction has traced the pedigree of the human intellect, conscience, and religion, to Ascidian skin-bags sticking to the sea-side rocks, is not likely to arrest the genealogy there, at a stage so little fitted to serve as a starting-point of derivative being. Or, if his own retreat should go no further, others will take up the regressive race, and, soon passing the near and easy line into the vegetable kingdom, will work through its provinces to its lichen-spotted edge; and, after perhaps one shrinking look, will dare the leap into the dead realm beyond, and bring home the parentage of all to the primitive elements of "matter and ~~mind~~." To give effect to this extension over the universe at large of the theory of Evolution, the scientific imagination of our day has long been meditating its projected book of Genesis, and has already thrown out its special chapters here and there; and though the scenes of the drama as a whole are not yet arranged, the general plan is clear; that the Lucretian method is the true one; that nothing arises for a purpose, but only from a power; that no Divine Actor therefore is required, but only atoms extended, resisting, shaped, with spheres of mutual attraction and repulsion; that, with

*force.*

these *minima* to begin with, a growth will follow of itself by which the *maxima* will be reached; and that thus far the chief and latest thing it has done is the apparition of Mind in the human race and civilization in human society, conferring upon man the melancholy privilege of being, so far as he knows, at the summit of the universe.

The main support of this doctrine is found in two arguments, supplied respectively by physical science and by natural history; each of which we will pass under review.

i. The former relies on the new scientific conception of the *Unity of Force*. When Newton established the composition of Light in his treatise on Optics, and the law of Gravitation in his Principia, he conceived himself to be treating of two separate powers of nature, between which, quick as he was to seize unexpected relations, he dreamt of no interchange. Yet now it is understood that when collisions occur of bodies gravitating on opposite lines, the momenta that seem to be killed simply burst into light and heat. When Priestley's experiments detected the most important chemical element on the one hand, and the fundamental electrical laws on the other, he seemed to move on paths of research that had no contact. Yet in the next generation, chemical compounds were resolved by electricity; which again turns up in exchange for magnetism, and can pass into motion, heat and light. To see the transmigration of natural agency, trace only through a few of its links the effects of the sunshine on the tropic seas. So far as it warms the mass of waters, either directly or through the scorched shores that they wash, it stirs them into shifting layers and currents, and creates *mechanical* power. But it also removes the superficial film; and thus far spends itself, not in raising the temperature, but in changing the form from liquid to vapour, and so altering the specific



gravity as to transfer what was on the deep to the level of the mountain-tops. It is the Pacific that climbs and crowns the Andes, resuming on the way the liquid state in the shape of clouds, and as it settles crystallizing into solid snow and ice. The original set of solar rays have now played their part, and made their escape elsewhere. But there is sunshine among the glaciers too, which soon begins to resolve the knot that has been tied, and restore what has been stolen. It sets free the waters that have been locked up, and lets their gravitation have its play upon their flow. As they dash through ravines, or linger in the plains, they steal into the roots of grass and tree, and by the tribute which they leave, pass into the new shape of *vital* force. And if they pass the homesteads of industry, and raise the food of a civilized people, who can deny that they contribute not only to the organic but to the *mental* life, and so have run the whole circuit from the lowest to the highest phase of power? That the return back may be traced from the highest to the lowest, is shewn by every effort of thought and will; which through the medium of nervous energy in one direction sets in action the levers of the limbs, and in another works the laboratory of the organic life, and forms new chemical compounds, of which some are reserved for use, while others pass into the air as waste. Still further: all doubt of identity in the force which masks itself in these various shapes is said to be removed by the test of direct measurement before and after the change. The heating of a pound of water by one degree has its exact mechanical equivalent;\* and a given store of elevated temperature will overcome the same weights, whether applied directly to lift them, or turned

\* Viz., the fall of 772 lbs. through a foot. See Mr. Joule's Experiments in Grove's Correlation of Physical Forces, p. 34, 5th Edition.

first into a thermo-electric current, so as to perform its task by deputy.\* The inference drawn from the phenomena of which these are samples is no less than this; that each kind of force is convertible into any other, and undergoes neither gain nor loss upon the way; so that the sum-total remains for ever the same, and is only differently represented as the proportions change amongst the different forms of life, and between the organic and the inorganic realms. Hence arises the argument that, in having *any* force, you have virtually *all*; and that, assuming only material atoms as depositaries of mechanical resistance and momentum, you can supply a universe with an exhaustive kosmogony, and dispense with the presence of Mind, except as one of its phenomena.

To test this argument, let us grant the data which are demanded, and imagine the primordial space charged with matter, in molecules or in masses, in motion or rest, as you may prefer. Put it under the law of gravitation, and invest it with what varieties you please of density and form. Thus constituted, it perfectly fulfils all the conditions you have asked; it presses, it moves, it propagates and distributes impulse, is liable to acceleration and retardation, and exhibits all the phenomena with which any treatise on Mechanics can properly deal. In order, however, to keep the problem clear within its limits, let us have it in the simplest form, and conceive the atoms to be all of *gold*; then, I would fain learn by what step the hypothesis proposes to effect its passage to the *chemical* forces and their innumerable results. *Heat* it may manage to reach by the friction and compression of the materials at its disposal; and its metal universe may thus have its solid, liquid and gaseous provinces; but beyond these varieties,

\* See Grove's Correlation, p. 255, 5th Edition.

its homogeneous particles cannot advance the history one hair's breadth through an eternity. It is not true, then, that the conditions which give the first type of force suffice to promote it to the second; and in order to start the world on its chemical career, you must enlarge its capital and present it with an outfit of *heterogeneous* constituents. Try, therefore, the effect of such a gift; fling into the pre-existing cauldron the whole list of recognized elementary substances, and give leave to their affinities to work; we immediately gain an immense accession to our materials for the architecture and resources for the changes of the world,—the water and the air, the salts of the ocean, and the earthy or rocky compounds that compose the crust of the globe, and the variable states of magnetism and heat, which throw the combinations into slow though constant change. But with all your enlargement of data, turn them as you will, at the end of every passage which they explore, the *door of life* is closed against them still; and though more than once it has been proclaimed that a way has been found through, it has proved that the living thing was on the wrong side to begin with. It is not true, therefore, that, from the two earlier stages of force, the ascent can be made to the vital level; the ethereal fire yet remains in Heaven; and philosophy has not stretched forth the Promethean arm that can bring it down. And if, once more, we make you a present of this third phase of power, and place at your disposal all that is contained beneath and within the flora of the world, still your problem is no easier than before; you cannot take a single step towards the deduction of sensation and thought: neither at the upper limit do the highest plants (the exogens) transcend themselves and overbalance into animal existence; nor at the lower, grope as you may among the sea-weeds and sponges,

can you persuade the sporules of the one to develop into the other. It is again not true, therefore, that, in virtue of the convertibility of force, the possession of any is the possession of the whole: we give you all the forms but one; and that one looks calmly down on your busy evolutions, and remains inaccessible. Is, then, the transmigration of forces altogether an illusion? By no means; but before one can exchange with another, *both must be there*; and to turn their equivalence into a universal formula, *all must be there*. With only one kind of elementary matter, there can be no chemistry; with only the chemical elements and their laws, no life; with only vital resources, as in the vegetable world, no beginning of mind. But let Thought and Will with their conditions once be there, and they will appropriate vital power; as life, once in possession, will ply the alembics and the test-tubes of its organic laboratory; and chemical affinity is no sooner on the field than it plays its game among the cohesions of simple gravitation. Hence it is impossible to work the theory of Evolution upwards from the bottom. If all force is to be conceived as One, its type must be looked for in the highest and all-comprehending term; and Mind must be conceived as there, and as divesting itself of some specialty at each step of its descent to a lower stratum of law, till represented at the base under the guise of simple Dynamics. Or, if you retain the forces in their plurality, then you must *assume* them *all* among your data, and confess, with one of the greatest living expositors of the phenomena of Development, that unless among your primordial elements you scatter already the germs of Mind as well as the inferior elements, the Evolution can never be wrought out.\* But surely a theory which is content simply to

\* Lotze's *Mikrokosmos*, B. iv. Kap. 2, Band. ii. 33, seqq.

assume in the germ whatever it has to turn out full-grown, throws no very brilliant light on the genesis of the Universe.

- ii. The second and principal support of the doctrine under review is found in the realm of natural history, and in that province of it which is occupied by *living beings*. Here, it is said, in the field of observation nearest to us, we have evidence of a power in each nature to push itself and gain ground, as against all natures less favourably constituted. There is left open to it a certain range of possible variations from the type of its present individuals, of which it may avail itself in any direction that may fortify its position; and even if its own instincts did not seize at once the line of greatest strength, still, out of its several tentatives, all the feeble results would fail to win a footing, and only the residuary successes would make good their ground.
- The ill-equipped troops of rival possibilities being always routed, however often they return, the well-armed alone are seen upon the field, and the world is in possession of "the fittest to live." We thus obtain a principle of self-adjusting adaptation of each being to its condition, without resorting to a designing care disposing of it from without; and its development is an experimental escape from past weakness, not a pre-conceived aim at a future perfection.

I have neither ability nor wish to criticize the particular indications of this law, drawn with an admirable patience and breadth of research, from every department of animated nature. Though the logical structure of the proof does not seem to me particularly solid, and the disproportion between the evidence and the conclusion is of necessity so enormous as to carry us no further than the discussion of an hypothesis, yet, for our present purpose, the thesis may pass as if established; and our scrutiny may be directed only to its bearings, should it be true.

(1.) The genius of a country which has been the birth-place and chief home of Political Economy is naturally pleased by a theory of this kind ; which invests its favourite lord and master, *Competition*, with an imperial crown and universal sway. But let us not deceive ourselves with mere abstract words and abbreviations, as if they could reform a world or even farm a sheep-walk. *Competition* is not, like a primitive function of nature, an independent and original power, which can of itself do anything : the term only describes a certain intensifying of power already there ; making the difference, under particular conditions, between function latent and function exercised. It may therefore turn the less into the more ; and it is reasonable to attribute to it an *increment* to known and secured effects ; but not new and unknown effects, for which else there is no provision. It gives but a partial and superficial account of the phenomena with which it has concern ; of their degree ; of their incidence here or there ; of their occurrence now or then ; of themselves in their characteristics it pre-supposes, and does not supply, the cause. To that cause, then, let us turn. Let us consider what must be upon the field, before competition can arise.

(2.) It cannot act except in the presence of some *possibility of a better or worse*. A struggle out of relative disadvantage implies that a relative advantage is within grasp, —that there is a prize of promotion offered for the contest. The rivalry of beings eager for it is but an instrument for *making the best of things* ; and only when flung into the midst of an indeterminate variety of alternative conditions can it find any scope. When it gets there and falls to work, what does it help us to account for ? It accounts certainly for the triumph and *survivorship of the better*, but not for there *being a better to survive*. *Given*, the slow and

the swift upon the same course, it makes it clear that the race will be to the swift; but it does not provide the fleetest feet by which the standard of speed is raised. Nay more; even for the prevalence of the better ("or fitter to live") it would not account, except on the assumption that whatever is *better* is *stronger* too; and a universe in which this rule holds already indicates its divine constitution, and is pervaded by an ideal power unapproached by the forces of necessity. Thus the law of "natural selection," instead of dispensing with anterior causation and enabling the animal races to be their own Providence and do all their own work, distinctly testifies to a constitution of the world pre-arranged for progress, externally spread with large choice of conditions, and with internal provisions for seizing and realizing the best. On such a world, rich in open possibilities, of beauty, strength, affection, intellect, and character, they are planted and set free; charged with instincts eagerly urging them to secure the preferable line of each alternative; and disposing themselves, by the very conditions of equilibrium, into a natural hierarchy, in which the worthiest to live are in the ascendant, and the standard of life is for ever rising. What can look more like the field of a directing Will intent upon the good? Indeed, the doctrine of "natural selection" owes a large part of its verisimilitude to its skilful imitation of the conditions and method of Free-will;—the indeterminate varieties of possible movement; the presentation of these before a selective power; the determination of the problem by fitness for preference;—all these are features that would belong no less to the administration of a presiding Mind; and that, instead of resorting for the last solution to this high arbitrament, men of science should suppose it to be blindly fought out by the competing creatures, as if they were

supreme, is one of the marvels which the professional intellect, whatever its department, more often exhibits than explains.

(3.) But, before competition can arise, there must be, besides the field of favourable possibility, *desire or instinct* to lay hold of its opportunities. Here it is that we touch the real dynamics of evolution, which rivalry can only bring to a somewhat higher pitch. Here, it must be admitted, there is at work a genuine principle of progression, the limits of which it is difficult to fix. Every being which is so far individuated as to be a separate centre of sensation and of the balancing active spontaneity, is endowed with a self-asserting power, capable, on the field already supposed, of becoming a self-advancing power. Under its operation, there is no doubt, increasing differentiation of structure and refinement of function may be expected to emerge; nor is there any reason, except such as the facts of natural history may impose, why this process should be arrested at the boundaries of the species recognized in our present classifications. Possibly, if the slow increments of complexity in the organs of sentient beings on the globe were all mapped out before us, the whole teeming multitudes now peopling the land, the waters, and the air, might be seen radiating from a common centre in lines of various divergency, and, however remote their existing relations, might group themselves as one family. The speculative critic must here grant without stint all that the scheme of development can ask; and he must leave it to the naturalist and physiologist to break up the picture into sections, if they must. But then, *Why* must he grant it? Because here, having crossed the margin of animal life, we have, in its germ of feeling and idea, not merely a persistent but a self-promoting force, able to turn to account whatever is below it;



the mental power, even in its rudiments, dominating the vital, and constraining it to weave a finer organism; and, for that end, to amend its application of the chemical forces, and make them better economize their command of mechanical force. Observe, however, that, if here we meet with a truly fruitful agency, capable of accomplishing difficult feats of new combination and delicate equilibrium, we meet with it *here first*; and the moment we fall back from the line of sentient life, and quit the scene of this eager, aggressive and competing power, we part company with all principle of progress; and consequently lose the tendency to that increasing complexity of structure and subtlety of combination which distinguish the organic from the inorganic compounds. Below the level of life, there is no room for the operation of "natural selection." Its place is there occupied by another principle, for which no such wonders of constructive adaptation can be claimed;—I mean, the dynamic rule of *Action on the line of least resistance*;—a rule, the working of which is quite in the opposite direction. For evidently it goes against the establishment of unstable conditions of equilibrium, and must therefore be the enemy rather than the patron of the complex ingredients, the precarious tissues, and the multiplied relations, of sentient bodies; and on its own theatre must prevent the permanent formation of any but the simpler unions among the material elements. Accordingly, all the great enduring masses that form and fill the architecture of inorganic nature,—its limestone and clay, its oxides and salts, its water and air,—are compounds, or a mixture, of few and direct constituents. And the moment that life retreats and surrenders the organism it has built and held, the same antagonist principle enters on possession, and sets to work to destroy the intricate structure of "proximate

principles" with their "compound radicals." With life and mind therefore there begins, whether by modified affinities or by removal of waste, a *tension* against these lower powers, carrying the being up to a greater or less height upon the wing; but with life it ends, leaving him then to the perpetual gravitation that completes the loftiest flight upon the ground. Within the limits of her Physics and Chemistry alone, Nature discloses no principle of progression, but only provisions for periodicity; and out of this realm, without further resources, she could never rise.

The downward tendency which sets in with any relaxation of the differentiating forces of life is evinced, not only in the extreme case of dissolution in death, but in the well-known relapse of organs which have been artificially developed into exceptional perfection back into their earlier state, when relieved of the strain and left to themselves. Under the tension of a directing mental interest, whether supplied by the animal's own instincts or by the controlling care of man, the organism yields itself to be moulded into more special and highly-finished forms; and a series of ascending variations withdraws the nature from its original or first-known type. But wherever we can lift the tension off, the too skilful balance proves unstable, and the law of reversion reinstates the simpler conditions. Only on the higher levels of life do we find a self-working principle of progression: and, till we reach them, development wants its dynamics; and, though there may be evolution, it cannot be self-evolution.

These considerations appear to me to break the back of this formidable argument in the middle; and to shew the impossibility of dispensing with the presence of Mind in any scene of ascending being, where the little is becoming great, and the dead alive, and the shapeless beautiful, and

the sentient moral, and the moral spiritual. Is it not in truth a strange choice, to set up "*Evolution*," of all things, as the negation of *Purpose* pre-disposing what is to come? For what does the word mean, and whence is it borrowed? It means, to unfold from within; and it is taken from the history of the seed or embryo of living natures. And what is the seed, but a casket of pre-arranged futurities, with its whole contents *prospective*, settled to be what they are by reference to ends still in the distance? If a grain of wheat be folded in a mummy-cloth and put into a catacomb, its germ for growing and its albumen for feeding sleep side by side, and never find each other out. But no sooner does it drop, thousands of years after, on the warm and moistened field, than their mutual play begins, and the plumule rises and lives upon its store till it is able to win its own maintenance from the ground. Not only are its two parts therefore relative to each other, but both are relative to conditions lying in another department of the world,—the clouds, the atmosphere, the soil; in the absence of which they remain barren and functionless:—and *this*, from a Cause that has no sense of relation! The human ear, moulded in the silent matrix of nature, is formed with a nerve susceptible to one influence alone, and that, an absent one, the undulations of a medium into which it is not yet born; and, in anticipation of the whole musical scale with all its harmonies, furnishes itself with a microscopic grand-piano of 3000 stretched strings, each ready to respond to a different and definite number of aerial vibrations:—and *this*, from a Cause that never meant to bring together the inner organ and the outer medium, now hidden from each other! The eye, shaped in the dark, selects an exclusive sensibility to movements propagated from distant skies; and so weaves its tissues, and disposes its con-

tents, and hangs its curtains, and adjusts its range of motion, as to meet every exigency of refraction and dispersion of the untried light, and be ready to paint in its interior the whole perspective of the undreamed world without:—and *this*, from a Cause incapable of having an end in view! Surely, nothing can be evolved that is not first involved; and if there be anything which not only carries a definite future in it, but has the whole *rationale* of its present constitution grounded in that future, it is the embryo, whence, by a strange humour, this denial of final causes has chosen to borrow its name. Not more certainly is the statue that has yet to be, already potentially contained in the pre-conception and sketches of the artist, than the stately tree of the next century in the beech-mast that drops upon the ground; or the whole class of Birds, if you give them a common descent, in the eggs to which you choose to go back as first; or the entire system of nature in any germinal cell or other prolific *minimum* whence you suppose its organism to have been brought out. Evolution and Prospection are inseparable conceptions. Go back as you will, and try to propel the movement from behind instead of drawing it from before, development in a definite direction towards the realization of a dominant scheme of ascending relations, is the sway of an overruling end. To take away the ideal basis of Nature, yet construe it by the analogy of organic growth, will be for ever felt as a contradiction. It is to put out the eyes of the Past, in order to shew us with what secure precision, amid distracting paths and over chasms bridged by a hair, it selects its way into the Future.

If the Divine Idea will not retire at the bidding of our speculative science, but retains its place, it is natural to ask, what is its relation to the series of so-called Forces in the world? But the question is too large and deep to be

answered here. Let it suffice to say, that there need not be any *overruling* of these forces by the Will of God, so that the supernatural should disturb the natural; or any *supplementing* of them, so that He should fill up their deficiencies. Rather is His Thought related to them as, in Man, the mental force is related to all below it; turning them all to account for ideal ends, and sustaining the higher equilibrium which else would lapse into lower forms. More truly, yet equivalently, might we say, these supposed forces, which are only our intellectual interpretation of classes of perceived phenomena, are but varieties of His Will, the rules and methods of His determinate and legislated agency, in which, to keep faith with the universe of beings, He abnegates all change; but beyond which, in His transcendent relations with dependent and responsible minds, He has left a glorious margin for the free spiritual life, open to the sacredness of Personal Communion, and the hope of growing similitude.

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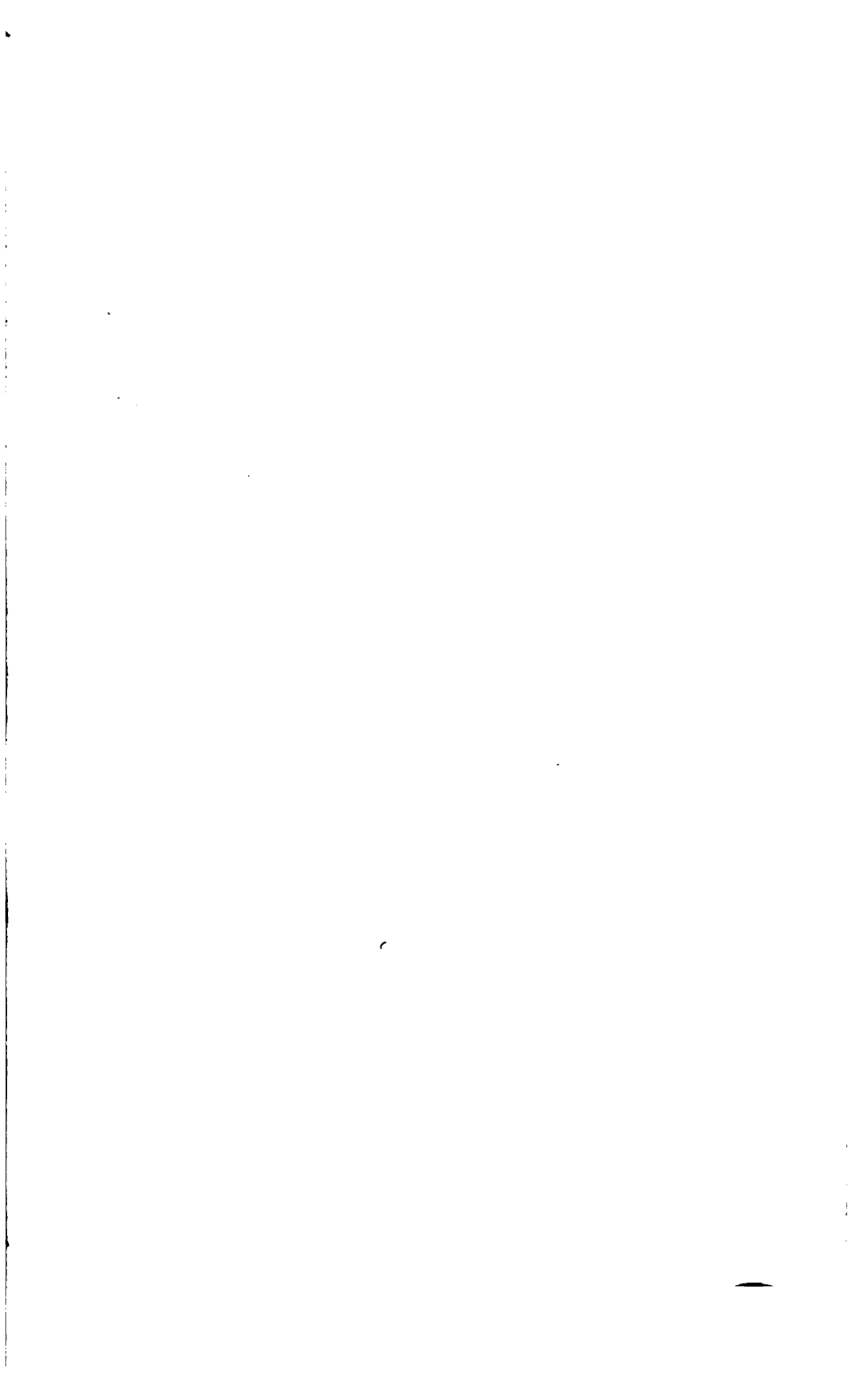
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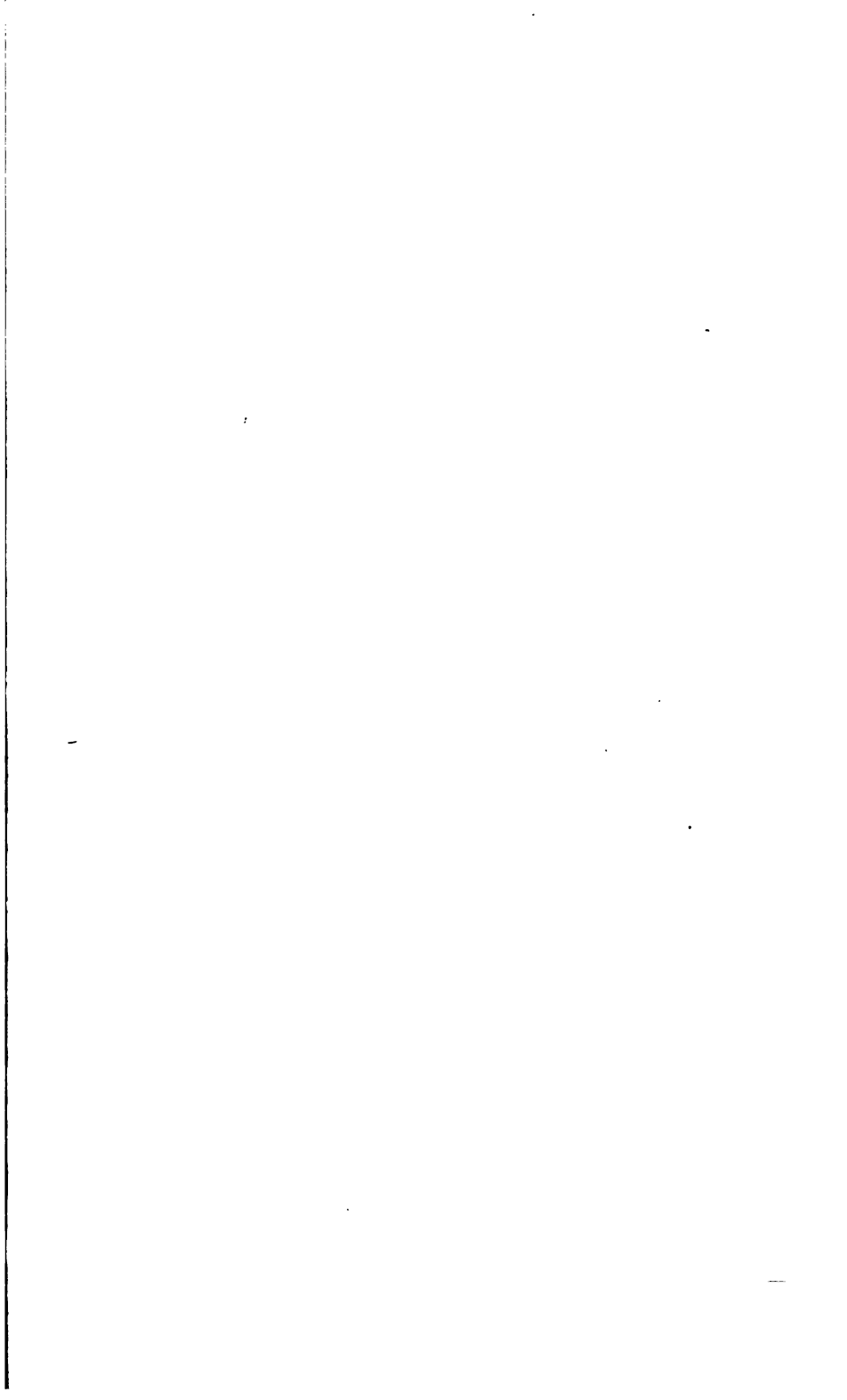
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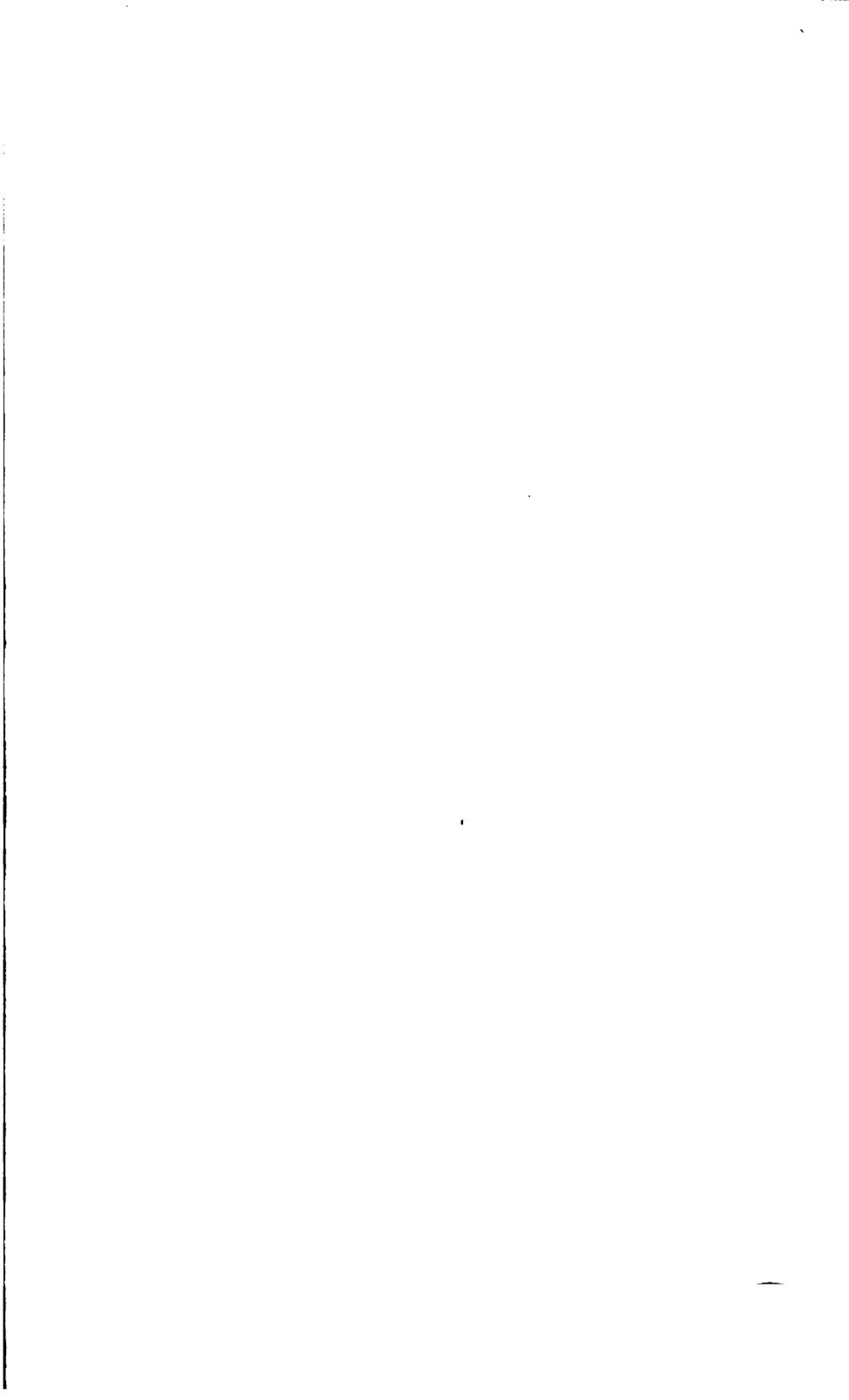




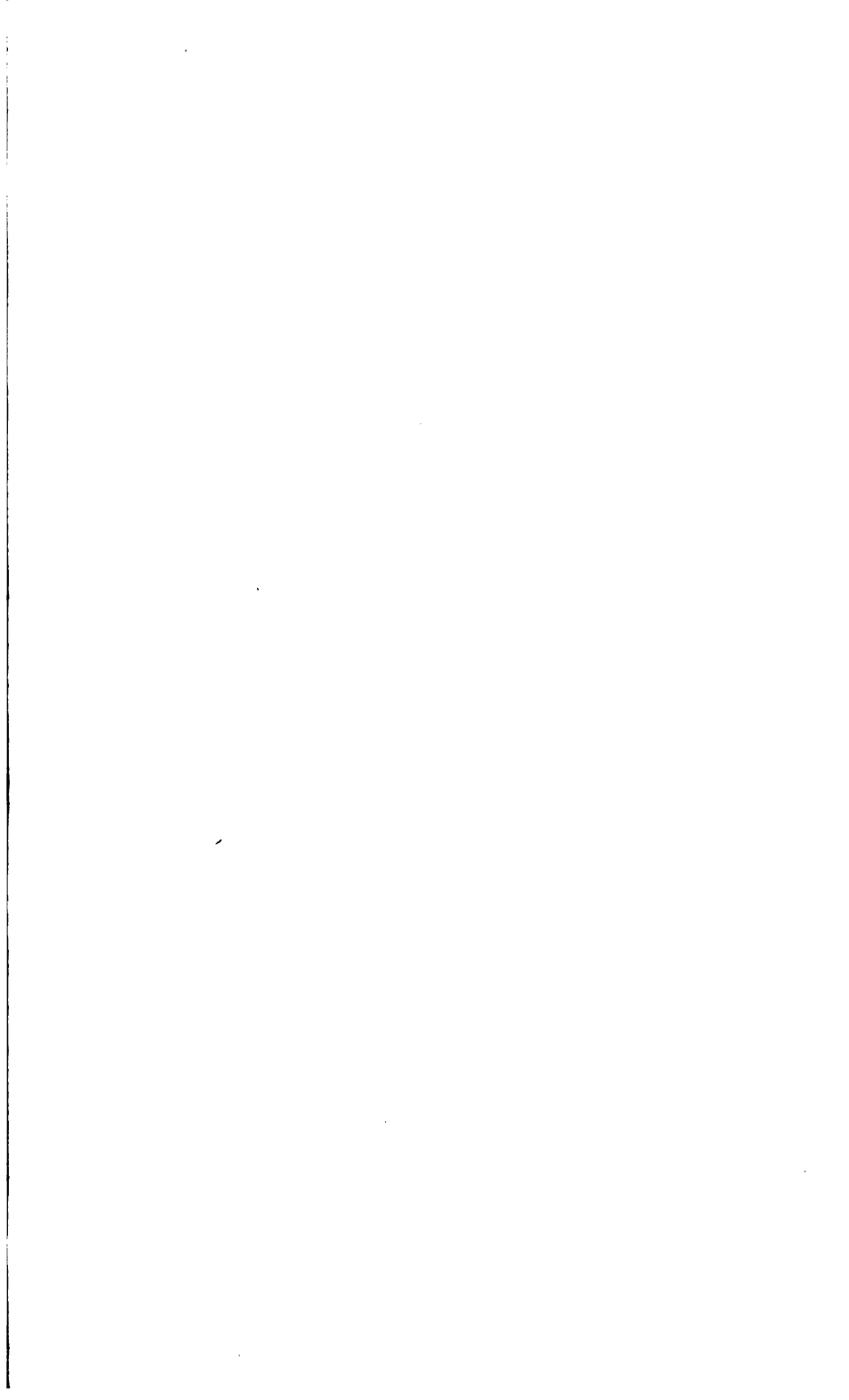










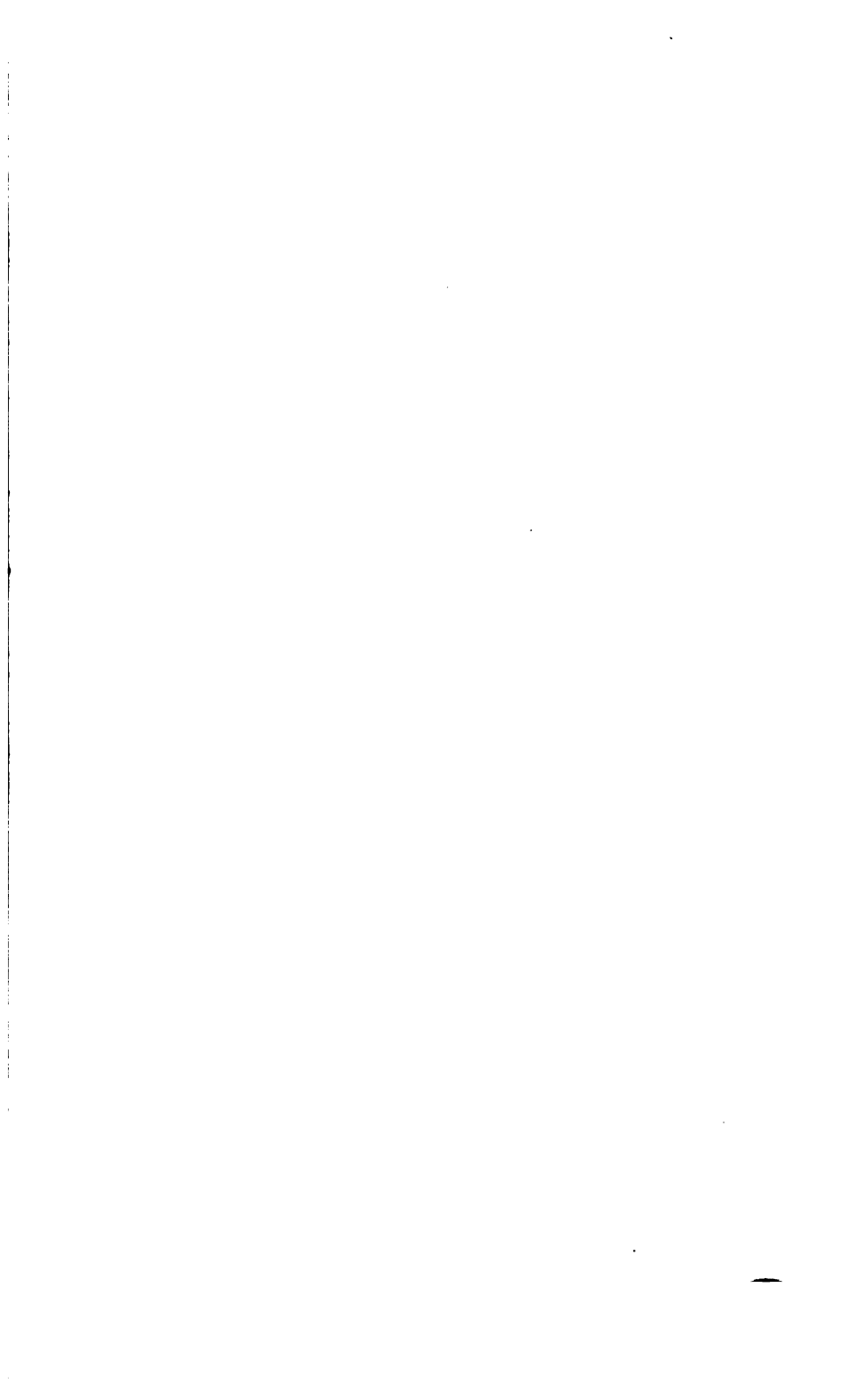










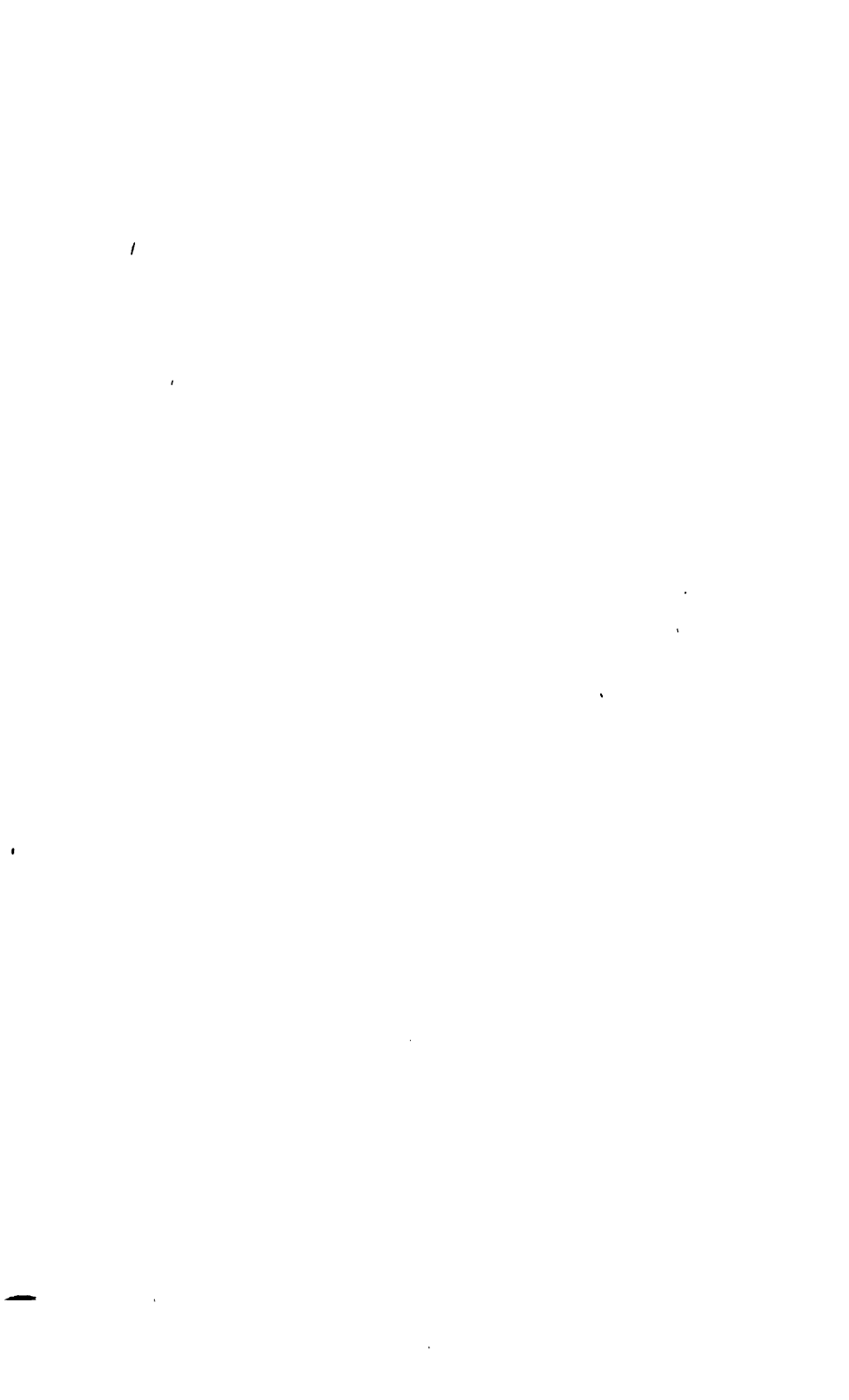








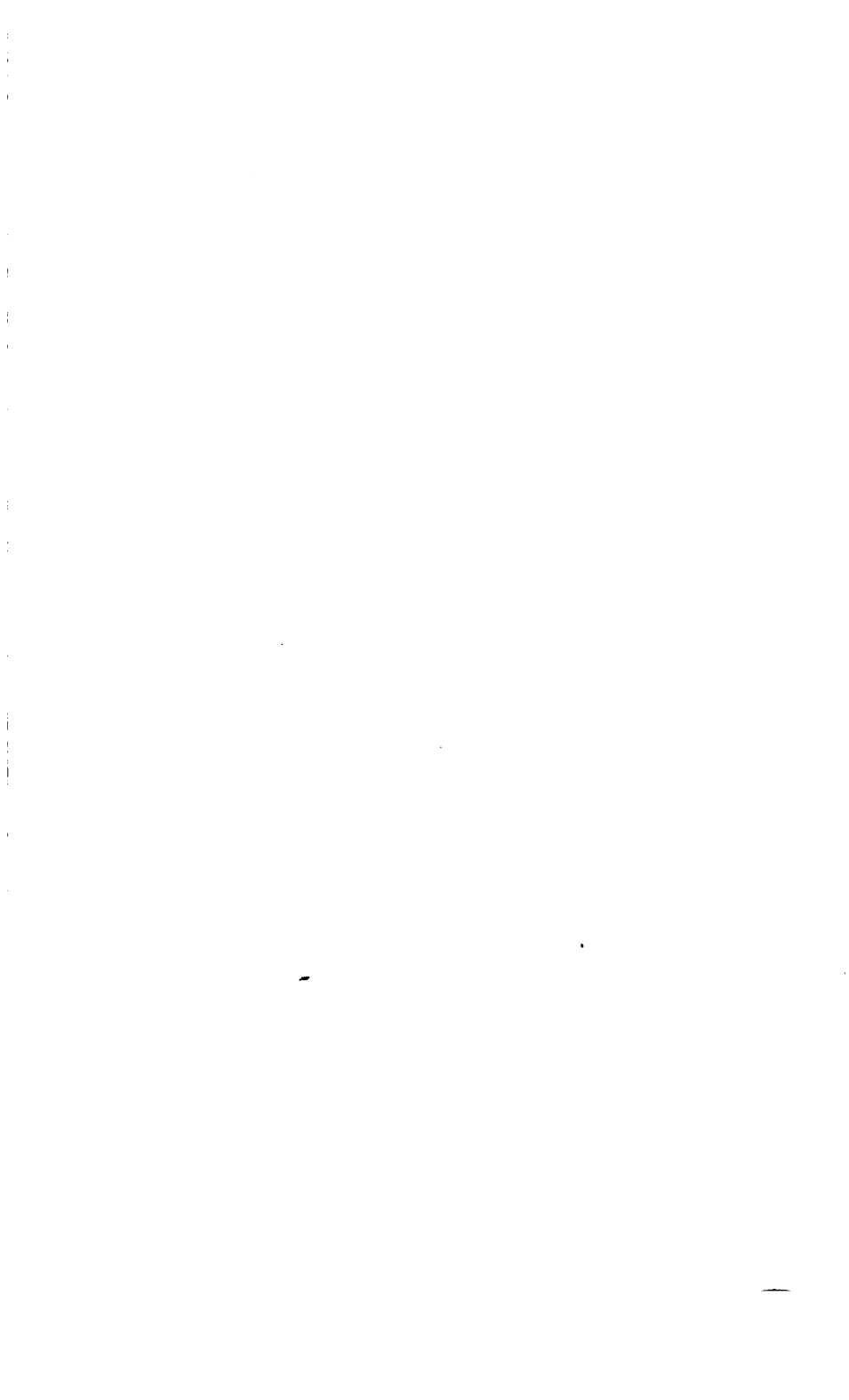






















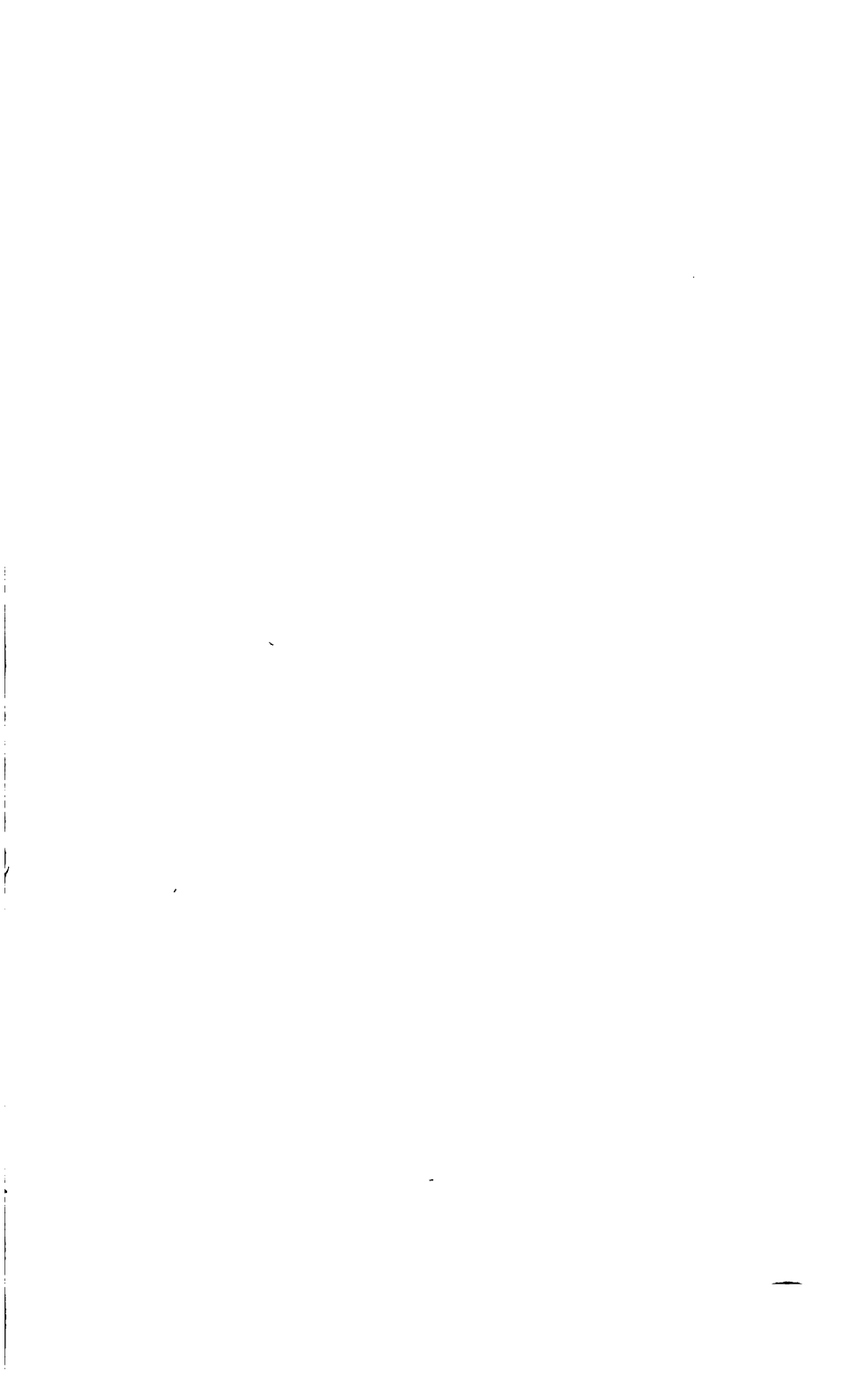








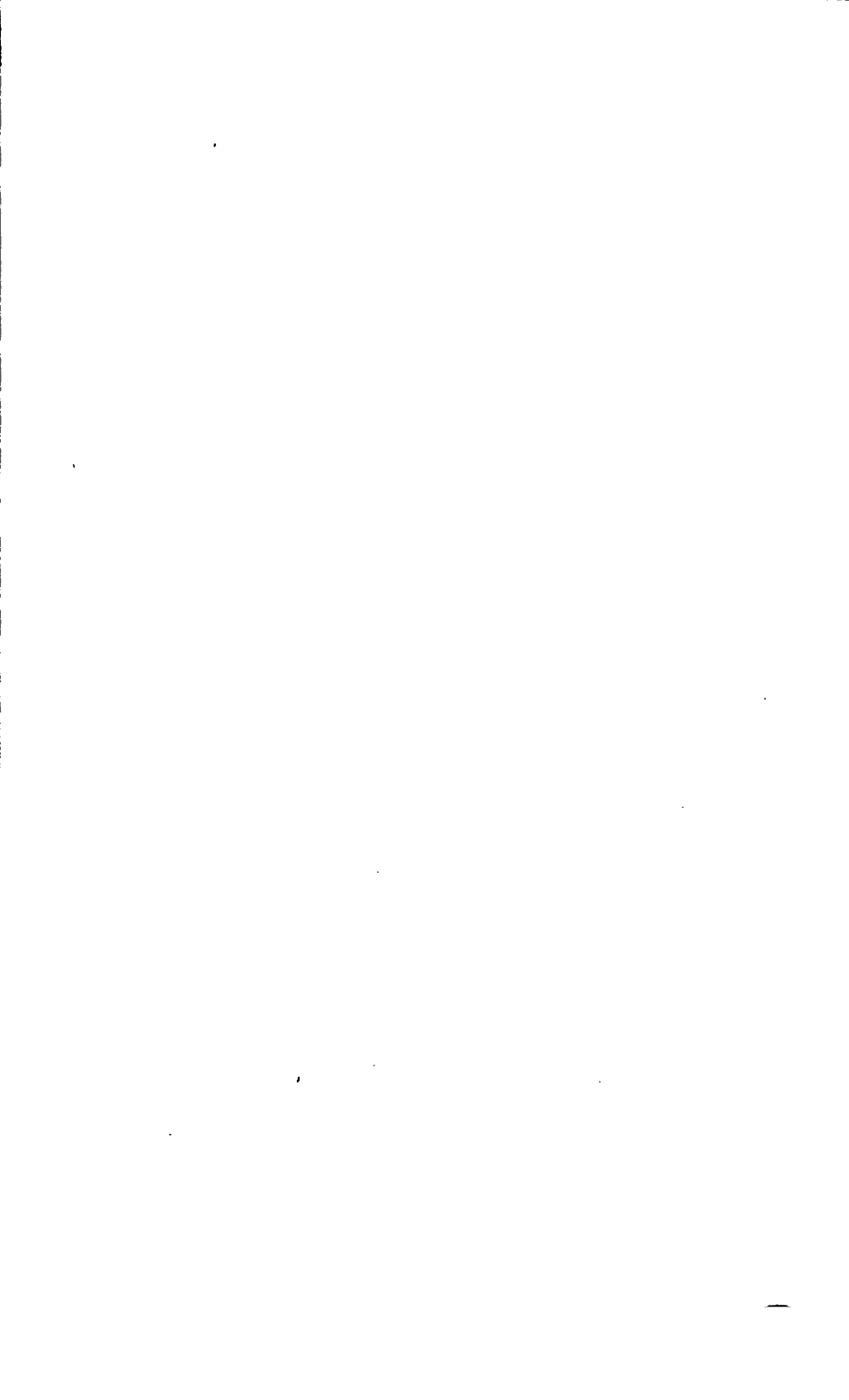
























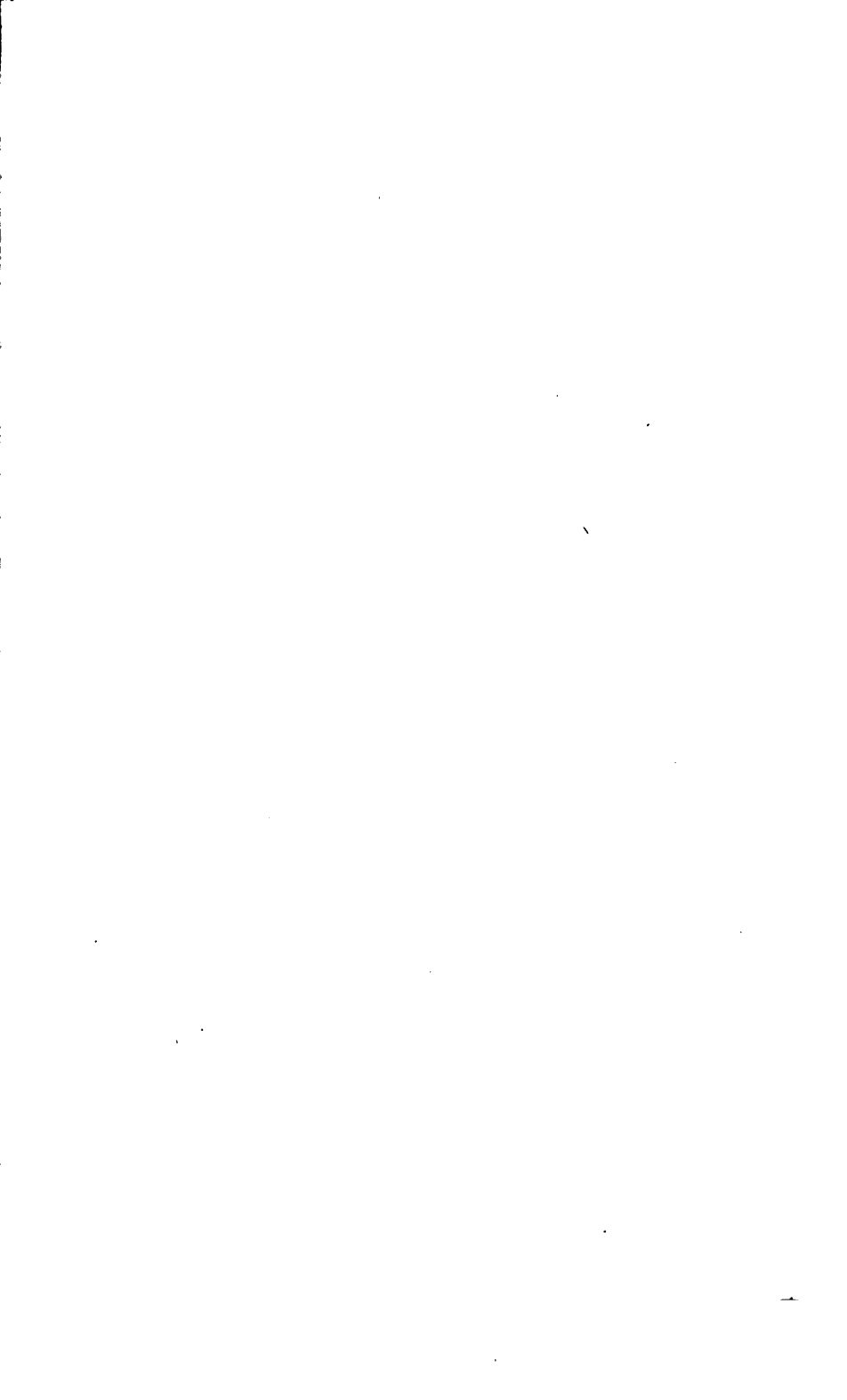


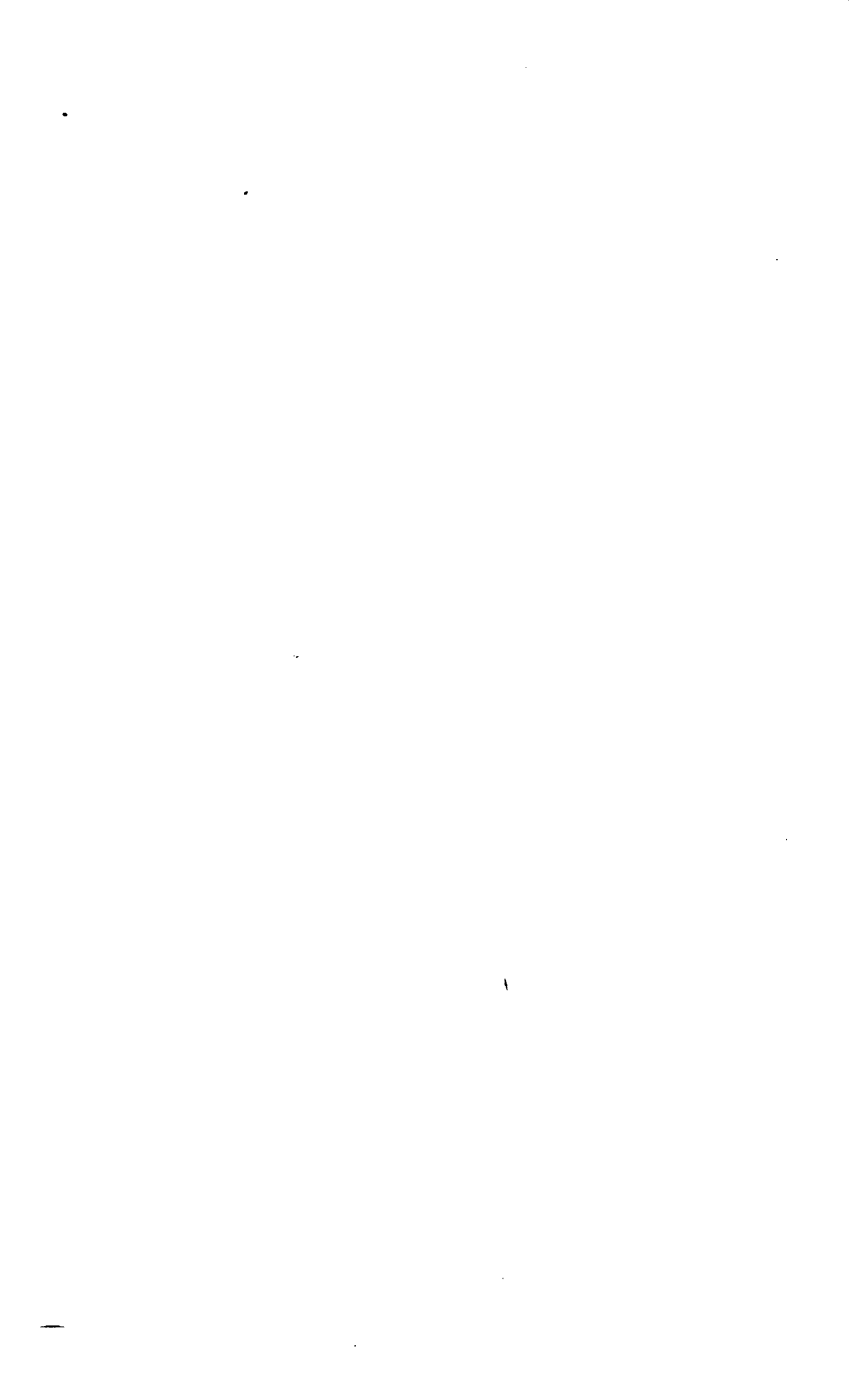


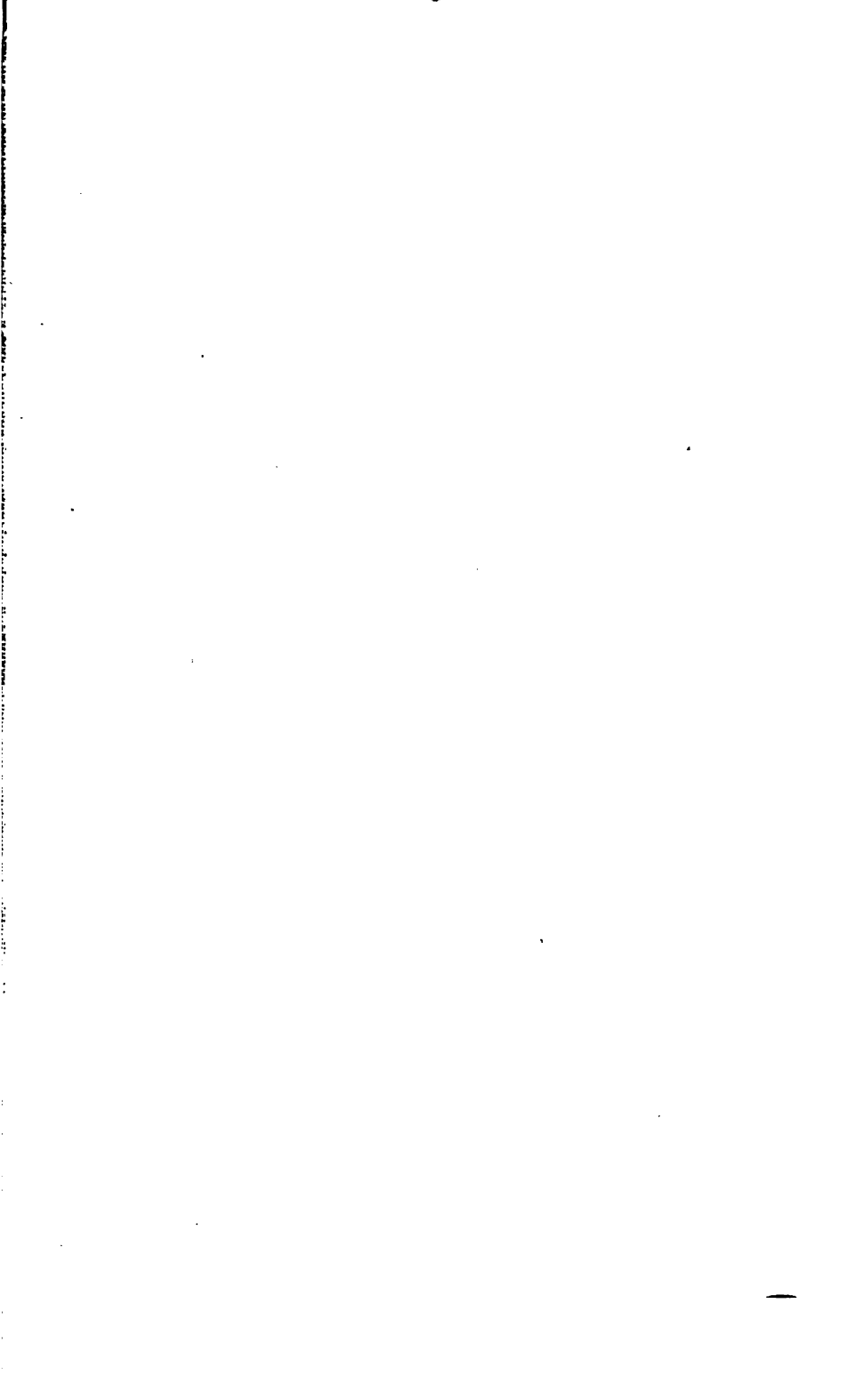










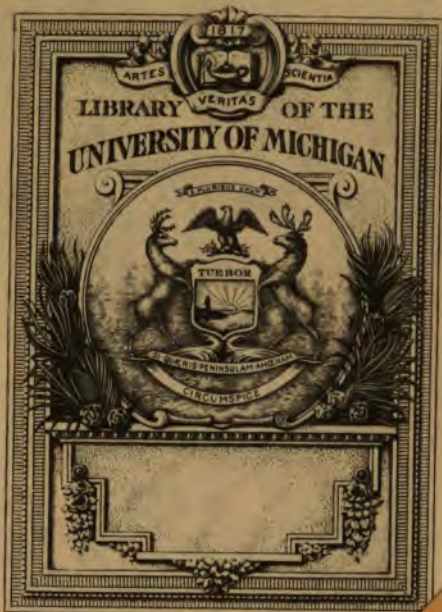




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